Transportation in Congested Cities

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No matter what other problems the highway engineers have confronting them, that of transportation in congested cities is the most difficult. It will get worse before it gets better. It will challenge us and threaten to change the economic foundation of our cities. One of its peculiarities is it attacks all cities, large and small. It is as difficult to drive to the butcher shop in Kokomo as it is in New York.

Some months ago, the Public Administration Clearing House asked the leading daily papers of the nation what subject they would like to hear discussed in a seminar. The answer of the press was "Breaking the Urban Traffic Jam." The Clearing House called in the experts on the subject, the press of the nation sent its reporters, and the seminar was held in Chicago on December 11, 1947. The experts did their best to answer the questions of these reporters, but it was quite apparent at the end of the meeting that no solution had been developed. The discussion for two and a half days, however, was intensely interesting and the keen questions of the press showed the great interest in solving this problem.

The New York Times had the following to say of the above-mentioned meeting:

The cities of the nation are fighting a thus far losing fight against the spreading cancer of traffic congestion.

Millions of dollars are being spent on it. Thousands of technicians are plugging at it. Yale University has a special graduate school hammering at it. So does New York University. So does Northwestern University. But, in spite of all effort, the grinding of gears and the murk of motor fumes are getting worse and worse.

That's the picture painted for newspapermen who trekked to Chicago from all parts of the country. They listened to a panel of experts ranging from the University of Chicago's venerable sociologist, William Fielding Ogburn, to practical men like New Jersey's Highway Commissioner Spencer Miller, Jr., and Walter McCarter, who has been imported from Cleveland to improve Chicago's archaic transit system.

The traffic headache, while speeding the decentralization of large cities, creating slums in central sections and weakening the tax base through withdrawal of industry and wealthier families, is not restricted
to your city hall. It's a dollars-and-cents matter to any number of large downtown retailers who have seen a definite ceiling clamped on the volume of goods they can sell because of it.

I wish to quote from the thinking of two men on the cause of this congestion, and of one man on the outcome of it. Perhaps some of us may use their reasoning in finding a solution. Colonel Willard Chevalier, one of our noted American engineers, said in 1932: “The man who invented the automobile did far more than invent a self-propelled vehicle—he built half of a new transportation system, the modern highway being the other half.” Spencer Miller, New Jersey State Highway Commissioner, said at the above-mentioned meeting of the Public Administration Clearing House: “Most people miss the significant point in Washington Irving’s ‘Rip Van Winkle.’ They remember that he slept for 20 years. That is not the point at all. When he went to sleep, there was a picture of King George on the sign at the inn, and when he awakened there was a picture of George Washington on the sign. He had slept through a revolution without knowing it. We have slept through the revolution caused by the motor vehicle without knowing it. We are just awakening.”

Decentralization

When I was a freshman engineer at Purdue in 1912, General Anson Mills came here to address the freshman engineers. Our attendance was compulsory. That was 35 years ago, and I can remember what he said better than any other address I have ever heard. It really impressed me and was the cause of my going into highway engineering. He said he did not care to talk to old people, because they would not believe him. He said what he was about to describe would not happen in his time, but would in our time. He said the building of good highways and the extension of electric transmission lines would bring about decentralization of living and industry. People would start moving out from the cities, into country environment, and industry would finally decentralize into small units in the country. We have seen decentralized living come about and there is some indication decentralized industry is on the way. Those of us who saw the Ruhr industrial district in complete ruin cannot laugh off decentralization.

Now let us consider the traffic congestion in the cities which causes our trouble and threatens to bring about decentralization. The engineers and architects who designed the skyscrapers designed enough elevator capacity to carry all the people who work in the building
and those who come there to transact business, but they did not design a parking lot for these people to park their cars. They thought they would arrive by train, streetcar, or on foot. They slept through the revolution when people decided to have their own motor cars and use them in their everyday lives. The same can be said for designers of picture shows, department stores, and the like.

When people suffer enough inconvenience, they start looking for a new business center, and instead of going down into the old business district, they find that a new one has sprung up in the outskirts, with better parking facilities. They start to trade there; more stores open branches in the outlying districts; and trade in the old district suffers and decay sets in. In many of our midwestern cities we can now notice the old business center decaying and new super-markets and dairy bars, with bare-legged waitresses serving customers in their cars. We slept through a revolution and are dismayed at this exposure of bare knees.

Sears, Roebuck and Co. has acted. The big merchandiser has worked out an exact formula for parking around its retail stores (150 car spaces for each million dollars gross sales annually). It is opening more stores in outlying sections, and in Chicago its northside store, with 1,500 parking spaces, is doing three times the business of the downtown store. In Flint, Michigan, the Sears store outside the central business district has expanded five times in the last 10 years, enlarging parking space each time. Sears is willing to go as high as $5 per square foot—$1,200 per car space—to improve parking.

The withdrawal from the central business district is best illustrated by the older, more congested cities. From 1931 to 1947 assessments on real estate in central Baltimore shrank from $175 million to $129 million, 27%. Since the mid-thirties, Detroit has lost 15%, Milwaukee 38%, Philadelphia 29%, and Boston 24%.

**Saving the Downtown Areas**

To save downtown areas, a more intensive use of mass transportation—subways, buses, and street cars—is needed, say the experts. When a bus is given exclusive use of one lane of a three-lane highway, the street can move four times as many people per hour as three lanes of autos. But, as the traffic men point out, people still have free will and apparently prefer to battle traffic rather than ride in antiquated and slow public equipment. This results in more traffic for the transit systems to buck, and even slower service for the straphangers.
The solutions that have been tried so far—fast expressways to downtown, and underground parking areas—have only added to the chaos. In the last 20 years, more than $500 millions has been spent improving the access to New York City, resulting in about a 40% increase in the number of persons entering the lower half of Manhattan each day. But as they turn off into the big city’s narrow streets, the tangle gets worse.

Recently, vast underground parking caves have caught the public fancy. San Francisco has one under a municipal park. This is fine for San Francisco, says Grant Mickle, Traffic Engineer for the Automotive Safety Foundation; but now New York is considering one under Central Park, which will be out of the way and cause further dislocations, he says.

Traffic experts acknowledge that, short of the impossible job of tearing down all big cities and letting the city planners have free rein in rebuilding on a pattern fitted to the automobile age, their problem is unsolvable. Their headaches are growing because the new suburbs that are springing up outside cities are being fashioned in the same checkerboard blocks that have made the old sections a morass of congestion.

Washington, D. C., has pioneered in the use of reversible one-way streets, changing morning and evenings with the flow of traffic on Rock Creek Parkways and 13th Street.

Rerouting through highways has done the trick in places like Bay City, Michigan, where conditions were brought in line with the auto age by redirecting traffic to other parts of the town.

Integrated traffic signals (replacing two lenses with three) have cut accidents from 106 a year to 65 in South Bend. New York is the most backward city in the country in this regard. Its lighting system was installed in 1926 and hasn’t been changed since. A revamping now would cost $1,300,000, which the city says it can’t afford.

Channelization of traffic and “traffic islands” are important if thousands of pedestrians aren’t to be killed each year. Peoria has followed the practice of making temporary islands of clay or lumber and trying them out for six months in different locations until the right combination is found. It is not considered safe for a pedestrian to cross more than two lanes of traffic without a safety island.

Special streets reserved for bus and streetcar traffic are one solution. St. Louis is experimenting in this, setting aside Olive Street for mass transportation. One bad driver or double parker can throw a
whole string of streetcars off schedule. McCarter estimates that since October the amount of time it takes for a streetcar to go through the Loop in Chicago has doubled. The cost in overtime and increased equipment necessary because of this Loop tie-up in the Windy City is put at $4.50 every time a street car enters the district—or $2,000,000 over the course of a year.

Despite the terrific increase in vehicular traffic over limited streets, part of the cities' troubles are of their own making.

My office is seven blocks (approximately one mile) from the Dearborn Station in Chicago, and I have a standing offer to bet anyone that I can walk to the station during the rush hours quicker than anyone can go in a taxi. I can get no takers. The New York World Telegram in its fifth traffic survey since 1936 reports that the present traffic jams have cost the city's business establishments approximately a million dollars daily for years. A million dollars a day is hard to comprehend.

**Traffic Congestion Valuation**

Is there a valuation to traffic congestion in cities? Here are some of the comments of the experts called together by the Clearing House seminar:

Dr. William Fielding Ogburn, Professor of Sociology, University of Chicago, says: "The railroads built the cities, and the automobiles are destroying them."

Victor Roterus, Resident Director, Social Science Research Project, University of Michigan, says: "We do not have to wait for atomic bombs to destroy the cities, the automobile has already 'bombed' the cities. Projecting the increase in number of automobiles to 1960, which is only 12 years away, the traffic jam or congestion will be 41% greater than it is today, which will, no doubt, spell the finish of cities as we regard them today, and make of them merely centers of finance, arts, culture, etc., with people living and working away from the former centers."

Walter Blucher, Executive Director, American Society of Planning Officials, says that the so-called express highway through the large cities will not cure the traffic jam, and decentralization will continue, to the greater deterioration of the central business districts. In his opinion, the only solution to save the city is to give public mass transport a better break or an opportunity to operate without obstruction, and charge enough to show a profit. Keep the private vehicle off the city street.
Mr. Joseph Barnett, Chief of the Urban Road Division, Public Roads Administration, says that the only hope for the future of large cities lies in the construction of express highways of limited access through the cities.

So far, there is no solution which can be put in effect quickly and cheaply, and we are not in agreement on how to correct the congestion, even by the long-range method and with a vast expenditure of money. It will take vast amounts of money at a time when each state highway department is crying for additional funds for its normal functions.

It will take money to do whatever is necessary to break the traffic jam in cities. Therefore, as highway builders, we should look this matter of money square in the face. The term “federal funds” or “federal-aid” is a misnomer. There is no such thing as federal funds. It is your money, and my money, sent to Washington and sent back minus overhead and incidentals. It is the greatest hocus-pocus of modern times. It takes the money from the people of Oklahoma and builds a free airport in New York; or the money from the people of Kansas and builds a free river terminal for the people of Wisconsin. The least that could be expected would be that federal-aid be spent for the benefit of the most people. But such is not the case. For everyone who travels by air, thousands travel by motor vehicle. Yet untold millions of federal aid is going for airports, while very little, except that raised by gas tax, is going for highways. For everyone who benefits from shipping on our rivers, thousands benefit from shipment by truck; yet untold millions of federal aid are being spent on the rivers and little except gas tax money on the highways. You as highway builders have not fought hard enough against this inroad on public funds.

So far in this paper I have merely established two points: that congestion does exist, and that we are badly in need of additional highway funds. We can all make a fight for more highway funds by becoming vociferous in our demands that so-called federal funds be spent more on highways and less on air fields and waterways.

Speculating on a Solution

As to the solution of the traffic jam in cities, I doubt if I have the answer. We must all work on this problem until we get the answer, or our cities are doomed. I wish some reputable engineering or planning agency would design the modern mechanized city, assuming it was starting in new country where no city exists, and see if
we can agree on what we want to serve this new age, where every 1.9 persons must have 240 square feet of parking space for an automobile. If we could agree on such a pattern, perhaps we could start rebuilding our present cities to conform as nearly as possible to the approved solution for a modern motor car city.

I do not believe the problem has been approached this way. If we were starting from scratch in the design of a city, would it be laid out in square or rectangular blocks, with streets intersecting at right angles, or would it take a circular form, with streets taking a radial pattern from the center, with belt streets intersecting the radials as often as necessary, and all traffic moving in one direction—the traffic flow alternating on adjacent radial and on adjacent belts, with parking of different types of vehicles at different distances from the center of the city? We can never have all the cars and trucks in the center of the city, but perhaps we could design the city where they would not need to come beyond a certain distance from the center of the city. Heavy freight trucks would stop on an outer circle. Smaller and faster trucks would deliver downtown. The individual who drives his own car and works in the center of the city might have to park his car on some belt line away from the center, and use public transportation or walk the remaining distance to the center. In every case, somewhere in the pattern there would be 240 square feet of parking space for every 1.9 people.

We cannot change our rectangular cities to circular cities, but perhaps in thinking this plan through, we can see how alterations in present cities can be made which would permit better traffic flow, so that cars can be parked where they should be parked.

Perhaps it should come from Purdue, from the School of Civil Engineering, from Ben Petty's Highway Engineering School. If Purdue could solve the problem of traffic jam in cities, it would have made the greatest contribution possible to modern life in America.